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NO XIX.

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After our pupils have become acquainted with synonomyzing and paraphrasing, if we may so call them, we put them to the derivation of words. We do not mean to the tracing of words to their roots in the different languages from which they are derived, but we mean, to what, in our language, are considered the radical or primitive words. It is surely understood by an English teacher, when we speak of the etymology of a word of our own language.* We know to what extent the meaning of the term goes; but English grammarians never meant, if they wrote their books for English scholars alone, to require them to trace derivatives to their roots in foreign languages, a requisition, we doubt, with which many grammarians themselves could comply.

The importance of derivation† must be obvious to all who reflect on the subject. For our own part we are convinced, that no employment in studying the elementary principles of language, is more useful to learners, than that of tracing the derivatives to their radicals, and *vice versa*. In the progress of teaching the Latin and Greek, and almost every other refined language, this practice is deemed highly important; and why may we not pursue, as far as it respects our own language, the same method in teaching it? By adopting this primitive mode, our youth would be enabled to acquire with facility as philological a knowledge of the English, as of the Latin, Greek, or any other tongue. Why the same method which the voice of antiquity and of learning, point out to be pursued in obtaining a classical knowledge of the Latin and Greek, should not be pursued in learning our own as far it is consistent with its structure and nature, we confess that we can see not the least shadow of a reason. It is the want of method that retards improvement. Let instructers adopt the same course in teaching the English, as in those languages which are termed classical, and it will be as well understood.*

On English derivation, Mr. Crabb,† author of a volume of the synonyms of our language, makes the following judicious observations. "Words admit of a formation in three different ways, viz. by *derivation, composition and inflexion.* Each of these three ways depends upon the preceding division of words, according to the nature of our ideas.

"Derivatives are such words as are made to express a more or less extensive idea by the addition of certain syllables, called affixes and prefixes. The first are so called, because they are joined to words; and the second, because they are placed before them.

"Thus the abstract terms are derived from the concrete; as, from *to know*, comes *knowledge*; from to *acknowledge*, comes *acknowledgment*; from *modest*, comes *modesty*, and from *grateful*, comes *ungrateful*, &c. &c.

"Derivation is generally called etymology, because it signifies the tracing of words from their foreign extraction. Derivation may, however, be considered as proximate and remote. The first, including words only that are derived from the language in

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* Speaking of etymology, reminds us of the plan we pursue, when we are teaching a class that are pursuing the English, the Latin and Greek languages at the same time. Supposing for instance, we have the word *multitude* in English: in tracing it to its root, we carry our pupils back to the original word in Latin: thus, multitude, is derived from the Latin word *multitudo*, which is derived from *multus*, many So of the Greek: take for example, the word *etymology*. It comes from the Greek words, Ετυμος, *verus*, and λογος, *verbum*, from which comes the verb λεγω, and its inflections.

† By the Greek and Latin student, the force of this observation will immediately be seen; and we hope it will not be forgotten by the English scholar. The primitives of the Greek language are about 3000; of the English, we believe, about 8000. Acquainted with the meaning of radicals, the acquisition of language is facilitated, because much difficulty is removed.

* The Editors refer their readers to their Juvenile Expositor, and the other American School Class Books, for farther observations on this subject.

It is said of one of the most acute and learned of the classical scholars of Europe, some years ago, that he could not write an English sentence grammatically, although his Latin and Greek compositions were characterised by purity and elegance of style. The Editors were acquainted with a professor of one of our most celebrated Colleges, who could not compose a letter grammatically, although he was well acquainted with the physical sciences, and the classics. Such things are shameful, and as the celebrated Cobbett has observed, "arise from the unusual devotion of time to the acquisition and cultivation of those languages, to the exclusion of our own." May we not apply the following from Cicero, to such *classical* geniuses?

Non enim tam præclaram est scire Latine, quam turpe nescire.

To be well acquainted with one's own language, is not so much a thing to boast of, as not to be well acquainted with it, is a disgrace.

† Crabb on education.

which they exist; and the second, comprehending those only which are drawn from another language. The second is of inferiour importance, since the present existing signification of words can be derived from no source so well as the most general acceptation which they may be found to have received among men at present. In fact, if not learnt by observation, it would be contradictory to expect any person to learn, from the use of a word several centuries ago, what is the sense now generally affixed to it. Remote etymology, therefore, is of very little use, except to show us the mechanism and origin of language. It enables us to form some idea of past periods. It is a species of history which will certainly repay the labour of such as derive pleasure from it;* besides that it is peculiarly useful to those, who, having first learned their own language, wish to become acquainted with others. An attention to this affinity will serve as remarkable aid in their studies.

"The utility of *proximate etymology* is to increase the scholar's stock of words, to exercise him in recapitulating what he has before learnt, relative to the nature of the ideas they express, and to unfold, in part, the mechanism of language.

"By *composition*, two distinct words are so united as to form one, the former of which explains the latter, as *evening-star*.

"By *inflexion*, words express the common relation of time, place, number, &c. from the addition or change of single letters or syllables, as *man*, *men*, &c.

"From a view of these three modes, the advantage of the previous studies must be too evident to need much elucidation. What boy at present, understands the nature of abstract ideas? or the relations of time, place, &c. And yet these words are perpetually recurring in every grammar, and are passed over, both by teacher and learner, as matters not necessary to be explained; or otherwise they attempt an explanation as the words occur, at a time when the mind is occupied with very different objects; thus crowding images upon images, in the most disorderly manner, and presenting nothing clearly. After the *formation* of words, a boy should proceed to their influence upon one another, under the articles of concord and government. This will prepare him for that branch in the study of language, which has been hitherto totally neglected in education, though of greater importance than any part of grammar. This is the power of words:" of which we have spoken in various parts of the Academician.

Having made these observations, we shall proceed to give a few examples in derivation; after which we shall add a few more, showing the use and force of the prefixes and affixes.

SIMPLE DERIVATION.

Example 1.

Legislate,	Subvert,
to make or pass laws.	*to overthrow, destroy.*
Legislator,	Subverter,
one who makes laws.	*one who destroys, an enemy.*
Legislation,	Subversion,
the act of making laws.	*act of destroying, ruin, destruction.*
Legislature,	Subversive,
power that makes laws.	*tending to overthrow.*

Example 2.

Adhere,	Advertise,
to stick close.	*to inform, publish.*
Adherent,	Advertiser,
a follower.	*one who advertises.*
Adherence,	Advertisement,
sticking to, attachment.	*public notice.*
Adherent,	Advertising,
united with or to.	*giving notice, informing.*

Derivation and prefixes.

*Com*plot,	*Com*plotter,
to plot *together*, join.	a joint plotter, a joint conspirator.
*Dis*please,	*Dis*pleasure,
not to please, to offend.	offence, anger, hate.
*Inter*mix,	*Inter*mixture.
to mix *between*, to mingle.	a mixture of ingredients, a mass.
*Pre*ordain,	*Pre*ordination,
to ordain or appoint *beforehand.*	a *previous* or *prior* adoption.
*Under*sell,	*Under*seller,
to sell *under*, lower, or cheaper.	one who sells cheaper or lower.

If the meaning of the prefixes, *com* or *con*, *dis*, *inter*, *præ*,* &c. &c. and likewise of the simple words

* Much time is spent in every place of education in learning what the ancients knew: it certainly is curious, and pleasing to be able to follow the march of the human mind from the earliest periods to the present; but still, it may be doubted, whether a part of that time is not lost, and whether it would not be better to devote more of it to the illustration of passing events, and to the acquisition of science as it is; which is cleared of much of the rubbish and absurdity with which it was surrounded in former times.

Aristotle's metaphysics kept in bondage the human intellect nearly 2000 years; and it certainly would be more *profitable* to know metaphysics in its present and more correct state than that in which it was formerly. It is curious to know what has been; but it is useful to know what *is*. We live but once; and life should be used to advantage.

* In teaching the Greek and Latin languages, very particular attention is devoted to the acquisition of a knowledge of the prefixes. The prefixes and affixes, of our language, have as specific a meaning as in those, and, a knowledge of them will prove extensively useful to the English scholar, in learning his own language.

be understood, the scholar has at once, a knowledge of the signification of the word thus compounded.*

Derivation, affixes and prefixes.

*Fore*stal,	*For*give,
to buy up before, anticipate.	*to pardon, excuse.*
*Fore*staller,	*For*giver,
one who anticipates the market.	*one who pardons or forgives.*
*Fore*stallation,	*For*giveness,
act of forestalling or anticipating.	*the act of forgiving or excusing.*

In these examples, both the affixes and prefixes are given, and we require the pupil to define the force and meaning of them as used in composition. The remark is almost useless, that the original or simple word by the addition of these syllables, is made to express a more or less extensive idea.

To illustrate the first example; nouns denoting the agent, or person acting, are derived from verbs, by adding *er* or *or* to the present tense; as from forestal, come forestall*er*, he who forestals, where the agent is denoted by *er*.

Nouns indicating state or act, are formed from verbs, by adding *ion;* as, from *fore*stal, comes *fore*stall*ation*, in which the act is denoted by the termination *ion*, &c.—The terminations or affixes and prefixes in our language are not many, and by a little industry may soon be mastered.

We shall add, as a concluding illustration, the following, in which a word is traced through its derivations, and the prefixes and affixes exhibited, together with a few examples of words, generally deemed synonymous, as used in combination. As it would require more room than can be devoted to a full and minute explanation of these, we must again refer our readers to the Expositor and Instructer, for a detail of their uses and meaning.

Example.

Affect.	Affectionate*ly*.
Affectat*ion*.	Affectionate*ness*.
Affect*ed*.	Affection*ed*.
Affected*ly*.	Affect*ious*.
Affected*ness*.	Affectious*ly*.
Affect*ion*.	Affectuosi*ty*.
Affection*ate*.	Affect*ive*,

Here it will be perceived, that by joining the prefix *un*, or *dis* the meaning of all these derivative, and even the primative, is changed: and likewise, that the various terminations, affect their signification.

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* For a full explanation of the prefixes and affixes, see Introduction to the Juvenile Expositor.

Definition and the meaning of words generally deemed Synonymous.

AFFECT, signifies to aim at or aspire after.

ASSUME, signifies to take to one's self.

Combination.

1. To *affect* is to use forced habits to appear to have; to *assume* is to appropriate to one's self.

2. *Affectation* springs from the desire of appearing better than we really are; *assumption* from the thinking ourselves better than we really are.

Definition.

CANDID, signifies to be pure as truth itself.

OPEN, is characteristic of truth and openness.

SINCERE, signifies the being dictated by, or going with the heart.

Combination.

1. *Candour* arises from a conscious purity of intention; *openness* from a warmth of feeling and love of communication; *sincerity* from a love of truth.

2. A *candid* man will have no reserve when *openness* is necessary; an *open* man cannot maintain a reserve at any time; a *sincere* man will maintain a reserve only as far as it is consistent with truth.

Candour obliges us to acknowledge whatever may be against ourselves; it is disinterested. *Openness* impels us to utter whatever passes in the mind; it is unguarded; *sincerity* prevents us from speaking what we do not think; it is positive.

4. *Candour* wins much upon those who come in connexion with it; it removes misunderstandings, and obviates differences; the want of it occasions suspicion and discontent. *Openness* gains as many enemies as friends; it requires to be well regulated not to be offensive: there is no mind so pure and disciplined, that all the thoughts and feelings to which it gives birth, may or ought to be made public.

Sincerity is an indispensable virtue; the want of it is always mischievous frequently fatal.

We may remark here, that there may be as many combinations as there are derivative words, from the primatives. Such lessons as these will exercise the mind of pupils, teach the use and application of words, and initiate them into the principles of composition.

These exemplifications of the principle, which we consider a material auxiliary in learning language, will we presume, be sufficient, to throw some light on the subject. Indeed, our object has been, throughout our work, but more particularly in this essay to throw out HINTS which may prove useful to instructors. We say hints, because, we could develope a system which it would require two or three Octavos to hold; when time will permit we shall lay before the public the whole of our process.

In order to illustrate the position, that the same word has different meanings, and that these are to be learned from their collocation in sentences, or in other words, that their signification is not to be obtained from a dictionary, in most of which, words are abstractly defined, we introduce the following exam-

ples. The principle for which we contend is a general one in learning language, and in showing its validity and correctness, we think we shall be striking at the root of the system of learning the *names* of every thing by *rote*, and establishing in our places of education, the necessity of employing, as the only sure auxiliaries in the expansion of the mind, *analysis* and *synthesis*, without the co-operation of which no system of instruction can be complete.

To ADVANCE (advancer Fr.) *v. a.*

1. It signifies, to bring forward, in the local sense.*

Now morn, her rosy steps in th' eastern clime
Advancing, sow'd the earth with orient pearl.

Milton.

2. To raise to preferment; to aggrandize.

He hath been ever constant, in his course of *advancing* me; from a private gentlewoman, he made me a marchioness; and from a marchioness, a queen; and now he intends to crown my innocency, with the glory of martyrdom.

Bacon.

The declaration of the greatness of Mordecai, whereunto the king advanced him.

Esther, X. 2.

3. To improve.

What laws can be advised more proper and effectual, to *advance* the nature of man to its highest perfection; than these precepts of christianity?

Tillotson.

4. To heighten; to grace; to give lustre to.

As the calling dignifies the man, so the man much more *advances* the calling. As a garment, though it warms the body, has a return with an advantage, being much more warmed by it.

South's sermons.

5. To forward; to accelerate.

These three last were slower, than the ordinary Indian wheat of itself; and this culture did rather retard than *advance*.

Bacon.

6. To propose; to offer to the public; to bring to view or notice.

Phedom I hight, quoth he; and do *advance* my ancestry from famous Coradin.

Fairy Queen.

I dare not *advance* my opinion, against the judgment of so great an author; but I think it fair, to leave the decision to the public.

Dryden.

Some ne'er *advance* a judgment of their own;
But catch the spreading notion of the town.

Pope.

To ADVANCE; *v. n.*

1. To come forward.

At this the youth, whose ven'trous soul
No fears of magic art controul.
Advanced. *Parnell.*

* See Johnson's Quarto Dictionary.

ADVANCED.

2. To make improvement.

They, who advance in knowledge, and not deceive and swell themselves with a little articulated air, should not take words for real entities in nature, till they can frame clear and distinct ideas of those entities.

Locke.

ADVANCE, *(from to advance).*

1. The act of coming forward.

All the foot were put into Abington, with a resolution to quit or defend the town, according to the manner of the enemy's *advance* towards it.

Clarendon.

A tendency, to come forward to meet a lover; an act of invitation.

In vain are all the practis'd wiles,
In vain those eyes would love impart;
Not all th' *advances*, all the smiles,
Can move one unrelenting heart.

Walsh.

His genius was below
The skill of ev'ry common beau;
Who, though he cannot spell, is wise
Enough to read a lady's eyes;
And will each accidental glance
Interpret for a kind *advance*.

Swift.

He has described the unworthy passion of the goddess Calypso, and the indecent *advances* she made to detain him from his own country.

Pope.

That prince applied himself, first to the church of England; and, upon their refusal to fall in with his measures, made the like *advances* to the dissenters.

Swift.

3. *Gradual progression*; rise, from one point to another.

Our Saviour raised the ruler's daughter, the widow's son, and Lazarus: the first of these, when she had just expired; the second, as he was carried to the grave, on his bier; and the third, after he had been some time buried. And, having (by these gradual *advances*) manifested his divine power, he at last exerted the highest and most glorious degree of it; and raised himself also, by his own all-quickening virtue, and according to his own express prediction.

Atterbury.

Men of study and thought, that reason right, and are lovers of truth, do make no great *advances* in their discoveries of it.

Locke.

4. *Improvement;* progress towards perfection.

The principle and object, of the greatest importance (in the world) to the good of mankind, and for the *advance* and perfecting of human nature, is religion.

Hale.

ADVANCEMENT.

1. The art of coming forward.

This refinement makes daily *advancements*; and

hope, in time will raise our language to the utmost perfection.

Swift.

2. The state of being advanced; preferment.

The Prince of the North,
Finding his usurpation most unjust,
Endeavour'd on *advancement* to the throne.

Shakespeare.

3. The act of advancing another.

In his own grace, he doth exalt himself
More, than in your *advancement.*

Shakespeare's King Lear.

4. *Improvement*; promotion to a higher state of excellence.

Nor can we conceive it unwelcome unto those worthies, who endeavour the *advancement* of learning.

Brown's Vulgar errours.

5. Settlement on a wife. *(This sense is now disused.)*

The jointure or *advancement* of the lady was the third part of the principality of one.

Bacon.

ADVANCER. He, that advances any thing; a promoter; forwarder.

Soon after the death of a great officer, who was judged no *advancer* of the king's matters; the king said to his Solicitor, "Tell me truly, what say you of your cousin that is gone?"

Bacon.

The reporters are greater *advancers* of defamatory designs, than the very first contrivers.

Government of the tongue.

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ADVANTAGE, signifies,

1. Superiority: often with *of* or *over*, before a person.

In the practical prudence of managing such gifts, the laity may have some *advantage over* the clergy; whose experience is, and ought to be, less of this world than the other. *Sprat.*

All other sorts and sects of men would evidently have the *advantage of* us, and a much surer title to happiness than we.

Atterbury.

2. Superiority, gained by stratagem or unlawful means.

The common law hath left them this benefit, whereof they make *advantage*, and wrest it to their bad purposes.

Spenser's state of Ireland.

But specially he took *advantage* of the night, for such privy attempts; insomuch, that the bruit of his manliness was spread every where.

2. *Macc. VIII.* 7.

Great malice, backed with great interest, can have no *advantage* of a man, but from his own expectations of something, that is without him.

South's sermons.

As soon, as he was got to Sicily, they sent for him back; designing to take *advantage*, and prosecute him in the absence of his friends.

Swift.

3. Opportunity; convenience.

Give me *advantage* of some brief discourse with Desdemona alone.

Shakespeare.

4. Favourable circumstances.

Like jewels to *advantage* set,
Her beauty by the shade does get.

Waller

A face, which is over-flushed, appears to *advantag* in the deepest scarlet; and the darkest complexion is not a little alleviated, by a black hood.

Addison.

True wit is nature, to *advantage* dress'd;
What oft was thought, but ne'er so well express'd.

Pope.

5. Superior excellence.

A man, born with such *advantage* of constitution, that it adulterates not the images of his mind.

Glanville.

6. Gain: profit.

For thou saidst, "What *advantage* will it be unto thee, and what profit shall I have, If I be cleansed of my sin?" *Job.*

7. *Overplus;* something more, than the mere lawful gain.

We owe thee much: within this ball of flesh,
There is a soul, counts thee her creditor;
And, with *advantage*, means to pay thy love.

Shakespeare.

You said, you neither lend nor borrow.
Upon *advantage.*

Shakespeare's Merch't. of Venice.

8. *Preponderation*, on one side of the comparison.

Much more should the consideration of this pattern, arm us with patience, against ordinary calamities; especially, if we consider his example with this *advantage;* that though his sufferings were wholly undeserved, and not for himself but for us, yet he bore them patiently.

Tillotson.

TO ADVANTAGE, (from the noun) signifies

1. To benefit.

Convey, what I set down, to my lady; it shall *advantage* more, than ever the bearing of letter did.

Shakespeare.

The trial hath damag'd thee no way;
Rather more honour left, and more esteem;
Me naught *advantag'd*, missing what I aim'd.

Milton.

The great business of the senses being, to make us take notice of what hurts or *advantages* the body; it is wisely ordered by nature, that pains should accompany the reception of several ideas.

Locke.

We should have pursued some other way, more

effectual, for distressing the common enemy, and *advantaging* ourselves.

Swift.

2. *To promote*; to bring forward; to gain ground to.

The stoics (that opinioned, the souls of wise men dwelt about the moon, and those of fools wandered about the earth) *advantage* the concert of this effect.

Brown's Vulgar errours.

To ennoble it with the spirit, that inspires the Royal Society, were to *advantage* it in one of the best capacities, in which it is improveable.

Glanville's Scepsis Scientifica

ADVANTAGEABLE, profitable, convenient, gainful.

As it is *advantageable* to a physician, to be called to the cure of a declining disease; so it is for a commander, to suppress a sedition which has passed the height.

Sir J. Haywood.

ADVANTAGED, possessed of advantages; commodiously situated or disposed.

In the most *advantaged* tempers, this disposition is but comparative; whereas the most of men labour under disadvantages, which, nothing can rid them of.

Glanville.

ADVANTAGE-GROUND, ground, that gives superiority, and opportunities of annoyance or resistance.

This excellent man, who stood not upon the *advantage-ground* before; from the time of his promotion of his Archbishoprick, provoked, or underwent the envy and reproach, and malice of men of all qualities and conditions; who agreed in nothing else.

Clarendon.

ADVANTAGEOUS, signifies

1. *Of advantage*; profitable; useful; opportune; convenient.

The time of sickness or affliction is, like the cool of the day to Adam, a season of peculiar propriety for the voice of God to be heard; and may be improved into a very *advantageous* opportunity of begetting or increasing spiritual life.

Hammond.

Here perhaps
Some *advantageous* act may be achiev'd
By sudden onset; either with hell-fire
To waste his whole creation, or possess
All as our own.

Milton.

2. It is used, with relation to persons; and followed by to.

Since every painter paints himself in his own works, it is *advantageous to* him to know himself; to the end, that he may cultivate those talents, which make his genius.

Dryden.

ADVANTAGEOUSLY, conveniently; opportunely; profitably.

It was *advantageously* situated; there being an easy passage, from it to India, by sea.

Arbuthnot.

ADVANTAGEOUSNESS, quality of being advantageous; profitableness; usefulness; convenience.

The last property, which qualifies God for the fittest object of our love is the *advantageousness* of his to us, both in the present and future life.

Boyle's Seraphic love.

To multiply examples to elucidate this point still more, would be useless; there is no difficulty in comprehending the principle, and when once clearly comprehended, we do not doubt, but, that all who reflect upon it will acknowledge its correctness, and its superiority to the method of learning languages as generally practised, in our places of learning.—After pupils have become familiarized with this mode of determining the means of words, (at first it requires the special care of the teacher) the next thing to be done, is to put them to the *application* of words, or to *phrase making*. In order to make ourselves clear upon this point, we remark, that we give out to the classs, a word, the meaning of which is already known abstractly, and require each individual to make a sentence in which that word (as well as all its derivatives) may be used according to any peculiar signification which may belong to it. We introduce an example or two.

EXAMPLE 1.

DENSE, close; compact; approaching to solidity.

The cause of cold is the *density* of the body; for all *dense* bodies are colder than most other bodies, as metals, stone, glass; and they are longer in heating than softer bodies.

In the air the higher you go, the less it is compressed, and consequently the less *dense* it is; and so the upper part is exceedingly thinner than the lower part which we breathe.

DENSITY, closeness; compactness; close adhesion or near approach of parts.

While the *densest* of metals, gold, if foliated, is transparent, and all metals become transparent, if dissolved in menstruums, or vitrified, the opacity of white metals arises not from their *density* alone.

The air within the vessel being of a less *density*, the outward air would press their sides together; and, being of greater *density*, would expand them so as to endanger the life of the animal.

EXAMPLE 2.

DEVOTE, to dedicate; to consecrate; to condemn; to addict; to curse.

If persons of this particular make should ever *devote* themselves to science, they should be well assured of a solid and strong constitution of body.

The Romans having once debauched their senses with the pleasures of other nations, they *devoted* themselves unto all wickedness.

DEVOTEDNESS, the state of being devoted; consecration; addictedness.

Whatever may fall from my plan to her disadvantage, relates to her but as she was, or may again be, an obstacle to your *devotedness* to seraphic love.

The owning of our obligation unto virtue may be styled natural religion; that is to say, a *devotedness* unto God, so as to act according to his will.

Devotee, one who is erroneously or superstitiously religious; a bigot.

The stylites or Pillar saints were *devotees*, whose mind is emblematic of all that suffer bigotry or superstition to overule reason.

Devotion, the state of being consecrated; act of external worship; prayer; act of reverence; strong affection; ardent love; earnestness.

Devotion may be considered either as an exercise of public or private prayers at set times and occasions, or as a temper of the mind, a state and disposition of the heart, which is rightly affected with such exercises.

He had a particular reverence for the person of the king, and the more extraordinary *devotion* for that of the prince, as he had had the honour to be trusted with his education.

Devotional, pertaining to devotion, religious.

The favourable opinion and good word of men come oftentimes at a very easy rate, by a few demur looks, with some *devotional* postures and grimaces.

Devotionalist,

A man zealous without knowledge, or superstitiously devout, may justly be called a *devotionalist*.

Intellect, the intelligent mind; the power of understanding.

All those arts, rarities and inventions, which vulgar minds gaze at, and the ingenious pursue, are but the reliques of an *intellect* defaced with sin and time.

Intellection, the act of understanding

Glanville says, that, simple apprehension denotes the soul's naked *intellection* of an object, without either composition or deduction.

And Bentley says, that many will say, it is not the bulk or substance of the animal spirit, but its motion and agility, that produces *intellection* and sense.

Intellective, having power to understand.

If a man as *intellective* be created, then either he means the whole man, or only that by which he is *intellective*.

Intellectual, relating to the understanding; belonging to the mind, transacted by the understanding.

Religion teaches us to present to God our bodies as well as our souls: if the body serves the soul in actions natural and civil and *intellectual*, it must not be eased in the only offices of religion.

Logic teaches us the right use of our reason, or *intellectual* powers.

We have already extended our remarks, farther than we intended in this number. In our next, we shall enter upon the subject *of learning words abstractly, or, as they are arranged in the columns of a dictionary, or in most of our spelling books.* We are by no means, friendly to the practice, adopted in many of our seminaries, in making children commit to memory columns of words, without, at the same time gaining a *single idea.* Sound is not *knowledge*, or its practical application, *wisdom.* We are convinced from long experience of the correctness of the process of which we have spoken; and we are likewise convinced, that all who reflect upon the subject, will at once see and acknowledge the usefulness, and correctness of the mode we have here mentioned, which calls for the independent exertions of the pupils' mind, without which, (when there is dependence, there is no vigorous effort at *thought*,) their mental powers become sluggish and improvement is retarded.

To be continued.

ON THE CULTIVATION OF MATHEMATICS, DURING THE EIGHTEENTH CENTURY, AND THEIR INFLUENCE UPON THE HUMAN MIND DURING THAT PERIOD.

Continued from Page 263.

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Thus it is, that the spirit of inquisitiveness and observation of calculation and experiment by which the eighteenth century is distinguished, was formed, through the impulse, first given by the mathematical, and immediately repeated by the physical sciences. All that was confined to mere combinations of words, however happy these combinations might be, or to theories however ingenious, if unsupported by facts enjoyed but a momentary celebrity; and, as, unhappily, the human mind in its progress encounters errour oftener than truth, the age most distinguished by the progress of reason, was more busied in battering down, than in raising the edifice of knowledge. But although the profound thinkers, whose matured and reflecting sensibility taught them to advocate the doctrine of the indefinite improvement of the human mind, were plunged into painful and unquiet meditation, by the aspect of the physical and moral evils by which we are besieged and the vices by which the very foundations of society are sapped; yet those men whom indolence or egotism has submitted irrevocably to the empire of prejudices, impute the storms which they have witnessed, to those who became the earliest victims of their fury, and without examination, condemn the discoveries which have thrown them far behind their own age in their attainments. Were it adviseable to descend into the arena, where relying rather upon their audacity than their strength, they challenge those who defend the cause of reason, it would not be difficult, by opposing the crimes that have sprung from ignorance and religious fanaticism, to the excesses that have prevented the reforms solicited by philosophy, to shew from the experience of all ages, that there exists in the depths of the human heart, a leaven which by its fermentation, produces periodically certain epidemic distractions, the rage of which it is vain to oppose. The passions draw from the most sound

ideas, pretences for loosening by their violent shocks, all the ligaments of society: The perpetual activity of ambition is asserted by envy which assumes every mask to disguise itself from the souls that it devours and to do its deplorable work: and, just as the few specifics that medicine possesses, do not always immediately arrest the progress of the disease to which they are applied, but usually only abridge its duration; so philosophy, although she has been vainly attempted to be proscribed, contributed to our return to order, as soon as her voice could be heard after the abolition of tyranny.

Although the cultivation of the sciences was suspended for a time by the first effects of a revolution which was to renew the forms of a powerful state, to destroy several governments and to shake all Europe,* yet men were soon driven back upon these speculations by necessity. They found a place even in the discussions of the constituent assembly, which, by having ordered an uniformity in the metrical system, made room for the most interesting geodesical operations that had ever been performed, and likewise for some of the most delicate physical researches. Being soon compelled to draw from our own soil, almost every sort of supply for our numerous armies, chemistry was called in aid to transform into saltpetre, the ruins of our edifices, and to prepare the steel that was necessary for the fabric of our arms. These services and others of which the detail might be tedious, pleaded so eloquently the cause of the sciences, that they first induced the national convention to think of reorganizing the system of instruction. Afterwards, some members of the committee of public safety, urged on by the men of science whom they had called upon to assist them with their information, seized the opportunity for executing plans as vast as they were new, and proposed the formation of the "*Central School of Public Labour.*† The various labours which a great nation requires, whether in its defence, or in the improvement and embellishment of its territory, borrowing the aid of almost every art and science, cannot be entrusted to men, taken by chance and destitute of intelligence. It is only by the most extensive preparatory studies that the capacity of directing these labours can be attained. However various they may be, they nevertheless may be classed into a small number of divisions, which are prevented by the multiplicity of their details, from being included under a single head, but of which the general principles are common or have a reciprocal relation. It was an object, then, for the purposes of public instruction, to separate these principles from the particular details of each division, which could be taught only in a special school; and this was the end proposed by Monge, Berthollet, Fourcoy, Guiton and Prieur who were the founders of the "Central School of Public Labour." Some of these men, having derived from the duties in which they were employed before the revolution, an exact acquaintance with the wants of the public service, others having been long devoted to actual instruction, and all being profoundly versed in the principles of the sciences, conceived and executed the plan of abolishing the partial and incomplete schools of pure mathematics which were in vogue before the revolution, and substituting in their place, a great school, in which four hundred pupils chosen according to their capacity, without distinction either of birth or fortune, should receive lessons from the most distinguished masters, in the mathematical sciences generally, in chymistry, in physics, in the general principles of the arts of construction, and the attack and defence of military posts, and should likewise be exercised under their inspection in the different descriptions of drawing, of design, and of chymical manipulation. To accumulate in a single establishment, fixed in the centre of the capital, under the eyes of the most distinguished scientific men, and under the immediate protection of government, the pupils, the masters and the means of instruction, was to increase the intensity of this focus of intelligence, by multiplying efforts on one side, and attention on the other; it was to furnish youth with the opportunity of joining in such bonds of friendship as would alternately produce harmony in whatever corps they might enter, and assure their common exertion for the public good by preventing those pretensions and jealousies which have been so frequently manifested; it was to interest men whose talents and discoveries have attracted the attention of enlightened Europe, in the glory and success of the individuals of whom these corps should be composed.

The beauty of this first plan awakened the spirit of study in every mind; and "the Central School of Public Labour," gave a powerful impulse to the cultivation of mathematics, throughout the whole extent of the French territory, while in its interiour, it wrought miracles among the masters as well as the pupils. The former, while engaged in it, have invented methods unknown before, the latter, while yet fresh from its bosom, have placed themselves upon a level with the learned.*

Another establishment, conceived perhaps in something like rivalry of the first, upon one of those plans which can only be attempted at a time when the means of those who govern appear inexhaustible, was formed for the purpose of preparing masters who should spread at once to the very frontiers of the Republic, the last and the highest attainments in human knowledge. If that gigantic idea which first gave birth to the Normal School, could not be completely carried into execution; if it could not be

* Lacroix speaks of France.

‡ Now the "Polytechnic School."

*Seven of these pupils have already been admitted into the first class of the Institute of France.

reasonably expected to form fifteen hundred able masters out of as many persons, for the most part advanced in life, habituated to the ancient methods and some of them even attracted by motives entirely foreign from the sciences, who were assembled at once in Paris; yet, it is by no means the less true that this school gave a prodigious public impulse. The general system of instruction in France, having been destroyed by the vehement pressure of the times, it was only by a shock of equal violence, that the motion which it had lost could be restored; and it must be acknowledged, that nothing was better adapted, than the Normal School to the production of this effect.

From the opposition of physical as well as political* circumstances, this school had but a short existence; but the lessons that Lagrange, Laplace, Monge, Berthollet, Haiiy, Daubenton, Garat, Volney and other distinguished men gave during this interval, excited the greatest emulation, not only among pupils capable of comprehending, of relishing and of profiting by their lessons, but also among all those whom the love of science associated at every attempt, that was made to revive their cultivation.

From facts like those I have suggested, it is impossible to mistake the influence which mathematics have had upon the restoration of the sciences; or that, by attracting universal attention, they became the principal object of primary education.†

We introduce from Hamilton's Hints, the following remarks on the comparative advantages of Lancaster Bell, and Pestalozzi's methods of instruction. We deem them correct and highly important to teachers and our country.

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CHILDREN may teach children the method of performing a given task, to the great ease and satisfaction of the teacher, whose labour is, by the employment of subalterns, much abridged; but by those who appreciate the benefits of instruction by its tendency to improve the mind and heart, it will appear, that the most important of the advantages that might be derived from making the young instruct the young, are in such cases nearly lost. As ardently as we desire to see the gates of knowledge opened to all without reserve, we cannot but think that it is of still greater importance to the community, that that part of the population for whose use the Lancasterian schools have been established, should derive from them the benefit arising from an improvement of the rational faculties, and a cultivation of the moral principles of our nature, than that they should acquire in them the elements of learning, and be left to the guidance of chance or circumstances, under whose blind direction their acquirements may be converted into instruments of good or evil.

It is admitted on all hands, that even in the ordinary routine of school tuition, the mental faculties are in some degree improved; but there is good reason to believe, that the improvement is far more limited than it would be, if the cultivation of the powers of the understanding were made an object of attention. The progress of children would not then be estimated by their ability to perform what they have seen performed by others, but by the clearness and accuracy of their ideas on all they have been taught. The competence of teachers of either sex would not then be estimated according to their knowledge of the methods practised in this or that school, but according as they were found more or less capable of communicating clear ideas to the minds of their pupils; and, of all methods of teaching, that by which such accurate notions were most certainly to be obtained, would, in every instance, be preferred. That this has not always been the case, will we presume be acknowledged. Great improvements have certainly been made, but we have not yet reached the point beyond which improvement is impossible.

In order to give a just notion of the different effects which are produced upon the mind by different modes of instruction in any given branch of edution, it will be sufficient to place before the reader a view of some of the different methods that have been adopted in teaching the first rules of arithmetic.

According to the notions that long and generally prevailed, it was deemed a sufficient foundation for knowledge in the science, to teach children to repeat by rote the names and signs of numbers from one to one thousand or upwards They were then though with some difficulty, taught to distinguish and to name the corresponding figures, and to divide them into units, tens, hundreds, &c. This last was the only part of the process in which clear ideas were necessarily communicated to the pupil's mind. He was made to perceive and understand, that a figure placed singly was denominated an unit, that a figure added to the left was a ten, and so forth; but though, by practice, he was enabled, quickly to prononnce to what class any figure in the line belonged, it was the words which he had named by rote that afforded him the key, and to these he was obliged constantly to have recourse. The rules which he was compelled to commit to memory successively at every step as he advanced, were composed in terms utterly beyond his comprehension; and as they were never explained to him, he gained no-

* A very rigorous winter and a scarcity produced partly by the fall of the paper money.

† About a page and a half of the original is here omitted. It relates simply to the fact, that the evils resulting from too exclusive a devotion to mathematics were partially remedied by the establishment of some institutions, in which literature was combined with science,—called Central Schools: they were of short duration.

thing by repeating them but an exercise of memory. Ideas upon the subject might be accidentally acquired, and where a notion of the advantages to be derived from a knowledge of arithmetic had been early impressed upon the mind, they would be sought for and obtained. But where there was no such stimulus to exertion, all must have been performed mechanically; and as whatever is not clearly understood is soon forgotten, we need not be supprised, that of the numbers who have thus been taught the art of cyphering, without any clear notions respecting the principles on which they worked, so few should have retained any of the little they at school acquired.

Let us now proceed to examine another and better method. According to this improved method, the novices acquire at once a knowledge of the names and forms of the numerical signs, by writing them on slates or black boards. Supposing the class to consist of twelve children, the first lesson in addition is given as follows.—The child at the head is asked by the teacher, what are two and two? If he professes ignorance, the question is put to the next, and repeated to each in his turn, till one, more knowing than his fellows, gives the proper answer. He is of course promoted, and from the place of dignity at the head of the class proclaims, that *two and two are four;* which words are repeated aloud by every individual in the little group. The teacher then proceeds to another question, which is in like manner solved by some one of the circle, and the discovery in like manner repeated as an axiom by the others.

Now here it may be observed, that though the child who was promptly told that two and two are four, or that two and three are five, has evinced that he possessed a clear and accurate notion of the relative powers of those numbers, it is to be questioned, whether, of the eleven *who repeated his words*, there be *one* to whose mind any idea was conveyed by the words repeated. In the instance adduced, it may perhaps be deemed of little consequence. But when we consider, that the same method is applied to the greater purposes of religious instruction, and that that knowledge of the meaning of all that is read in every Bible-lesson, extraordinary as it in some instances appears, must in fact, (when this method prevails), be limitted to certain individuals, its importance will wear a more serious aspect. But to proceed to a third method of teaching arithmetic, the method employed by Pestalozzi.—

Knowing that the first notion of numbers must necessarily be obtained through the medium of the external senses, it is by objects adapted to the senses of sight and touch, and not by words alone, that he gives the first ideas upon the subject to the infant mind. The teacher, taking a handful of beans, (or what else he chuses to use as counters,) gives one to each of the little pupils placed round his table. This each lays before him, and pronounces to be *one bean*. Another *one* is then given, and the first and second *one* are placed together, and, when thus united, assume the name of *two*. Another *one* bean is then added, and the whole put together become *three*. This process is continued until all are capable of distinctly counting to the number ten. Each is then desired to take from his heap two beans, and having placed them together on the table, puts then other two down at a small distance, and having named the separate quantities, two and two, is made to join them together; and if his notion of numbers obtained in the former part of the exercise has been sufficiently accurate, he will easily, by the exertion of his own perceptions, be enabled to give to the number its appropriate term. In this way a distinct notion of all the combinations of which the units are susceptible is introduced. A knowledge of the figures which are the signs of numbers is next given. And then, again, by means of counters, which answer for tens, and the beans, which have represented units, the process is carried forward as far as may be found necessary. All the rules of arithmetic are taught by Pestalozzi on the same principle. I say nothing of his tables, and other contrivances for facilitating his purpose, as such apparatus, however useful, are by no means essential to the communication of clear ideas, which is the primary object in view.

So seldom, however, does this object enter into the contemplation of teachers, it would not occasion us any surprise to find, that among the numbers who, at the schools established on the old or new systems, seem in this branch of education to have made astonishing progress, there were nevertheless many, who, notwithstanding their adroitness in working questions in arithmetic, would, from want of clear ideas upon the subject, be extremely puzzled by the simplest proposition, if put in a form differing from that to which they had been accustomed. We know this to have been the case in many instances;—the amiable and excellent young men, to whose benevolence the school owed its existence, have given it as a reason for discontinuing the Bell and Lancastrian method of teaching.

But where no clear ideas have been given at the commencement, it is impossible that any method which the art of man can devise, should be attended with complete success. A child may be taught to climb a ladder, and when he has reached the top, he will see the objects that are there presented to his view; but if you take away the intermediate steps, can you suppose, because of his having learned glibly to repeat after you the names of objects seen from such a height, that he has actually made a leap from the bottom of the ladder to the top, from which alone the objects are distinctly visible? This, however, absurd as it may appear, has frequently been practised in education.

To this practice the universal adoption of Pestalozzi's principle would put a final period.

For the Academician.

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PESTALOZZI,

NO. III.

In presenting you these papers, I wish you to understand that they are written without recourse to any books, and despatched without a reperusal, so that, as I perceive in the first number, some trivial errours have escaped me. Neither must the manner or the language which I use, be considered as the exact manner or terms used by the teacher; in these particulars, as *truth*—that is true or correct ideas alone, are sought, the particular modes of speech are not so much regarded as clearness and appropriate terms: yet purity of speech is never disregarded; and whenever occasions present themselves of accidental errours of speech, or inappropriate or erroneous terms, the occasion is used to inculcate a lesson on Orthography, on Syntax, or on Grammar, according to the degree of prior attainments in the pupil or the class. In these particulars my course of explanation will appear desultory and immethodical; but in this apparency, it will resemble the method itself, which imitates the diversity of real and natural life. On this an example was given in the second number, of a transition from the study of natural objects visible to the senses, to the nature of ideas and the mind; and I shall pursue that interesting part of education.

Teacher. Well William, do you remember what we spoke about yesterday?

Pupil. You allude to the plums and plum trees.

T. Yes, and to what followed.

P. O yes, I have been *thinking* about that; and I now know what is meant by thinking, though I am still at a loss to explain myself.

T. Have you made the effort to trace the manner of your seeing, and afterwards remembering what you had seen?

P. Yes, I think I can do that.

T. Let us now hear how you explain that; don't be discouraged, as we shall all help you, if you need any assistance.

P. To me it appears this way; having first seen the tree, and the plums so beautiful in their purple bloom, their form resembling eggs, their skin so smooth, and their flavour so pleasant, the idea of a plum was formed on my mind; for this I know, that even when I shut my eyes, the image remained perfect in my perception.

T. This is perfectly stated: these ideas then must come in aid of others, for I see you have introduced an egg as a subject of comparison with a plum; no doubt you can perceive that comparison is a powerful agent of knowledge; but have you reflected on the mode in which you communicate your ideas to others?

P. By the mind I retain the picture of the thing that I had seen; and to the picture or idea, there is a name affixed; the name of a plum communicates in one word, the idea or picture; but it does more, the word also signifies the properties of some, and taste.

T. This is satisfactory; but it would seem from some expressions, that you suppose that ideas are to be acquired by seeing only.

P. I do not precisely comprehend you.

T. I will make myself understood,—have you not some ideas of the mewing of a cat, the barking of a dog, the crowing of a cock, the lowing of cattle, the awful roar of thunder, the pattering of hail, the act of laughing or crying, singing, or snoring, or of musical harmony, or the sound of a bell?

P. All these things I have *heard.*

T. What, and did you never *see* them?

P. Most certainly not, sounds are not to be seen.

T. Then if you acquired your idea of a plum by seeing it, how is it possible for you to have an idea of sound unless you see it?

P. Have I not told you that I *heard* sounds and did not *see* them.

T. But how did you come to have an idea of them?

P. Have you not repeated a thousand times to us that all our ideas are derived through our senses; and is not hearing one of the five.

T. You are right, I recollect:—what was it I said?

P. You said our senses were five; seeing, hearing, smelling, tasting, and feeling.

T. You have ideas of bread, butter, meat, apples, sugar, tea, vinegar, grapes, salt, &c.—did you acquire your ideas of these by the sense of *hearing* or *seeing*?

P. The names I acquired by hearing, the forms by seeing, but other properties by tasting, smelling, and feeling.

T. You admire the full blown rose I find?

P. Very much.

T. Is it the taste, or the shape, or the colour of it which you admire so much?

P. I admire the form of its leaves and flower, but it is the *sense of smelling* which gives me in its fragrance, the most perfect and pleasant idea of the rose.

T. Was it the smell of the roast beef at dinner that made you remark it was tough—and ill flavoured?

P. O! no no! that was an idea produced by the senses, of taste and feeling.

T. Do you know of no other mode by which ideas are acquired?

P. No sir—I do not.

T. Nor I either; for it appears that the feelings are the only sources of our ideas—for it may be said that when we *see*, we *feel* with our *eyes;* when we *hear*, we *feel* with our *ears;* when we *taste*, we *feel* with our *tongue;* when we *smell*, we *feel* with our

nose; and these organs are the organs of sensation or feeling.

The discourse may stop here or be led off to another topic; but it is not on one or twenty discourses and conversations it rests; it assumes new forms, and is introduced on every suitable occasion, until the habit is formed to that mode of reasoning. Thus if the ideas of things or the sense, become heavy, it is led to ideas of elevation, extension, or magnitude; to the height of a wall, the length or breadth of a field; in feet or yards; and these first ideas are simple in the beginning; the quantity of a yard in length is determined, the feet, that compose it, and the inches and its decimal parts, are recorded on the tablet of the mind. It is also a rule of this system to use decimals wholly, being the simplest, shortest and more susceptible of minuteness and magnitude; and therefore to be preferred to every other. The ideas of forms are first pointed out as discriminated by outline; regular *figures, space, extension, magnitude,* induce inquiries, which all result in the necessity of resorting to first principles, and the properties of lines are sought and developed; this exercise is, without being so announced, the first element of several branches of education—it leads to *writing,* to *geometry,* to *drawing* of every description; and he who is so fortunate as to be educated thus, will in whatever pursuit he may undertake, be better prepared with accurate ideas, than he can be by any other system.

It is easy to imagine, by a little reflection, how unbounded is the use of the knowledge of lines, and how easy it is, therefore, to start an inquiry. The teacher asks how long such a fence is, and there are various guesses, and the rule which the teacher *accidentally* carries about him, enables the pupils at once to measure a foot, or to cut a stick to a yard or to a fathom, or a perch length: this is itself a necessary branch of knowledge, and care is taken so to make it a matter of *mistake* sometimes, as to give an acute pupil the opportunity of detecting it, and so keeping the wits of the rest awake.

The pupils are now returned from their excursions in the open air, and once more seated on their benches; a short conversation takes place, in which the errours (committed on purpose) are referred to; the discovery is made that it is owing to a want of due attention to the properties of lines; and an exercise on lines is at once begun by calling for slates and pencils; and the teacher proceeds thus:

Teacher. We have made some blunders to-day from want of a due attention to lines of length: come Robert, I have seen you drawing something on the barn door with chalk, what was it?

Pupil. Nothing correct or satisfactory, Sir, a few rough lines.

T. What is your idea of a line?

P. It is the same as a stroke drawn with chalk or with a pencil or ink on paper.

T. That no doubt expresses the name of the thing, but what were you attempting to draw?

P. A ship—and a house—and a man's face.

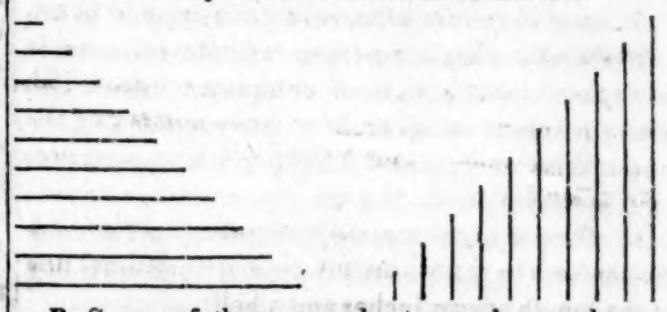
T. Did the same lines serve all those purposes?

P. The same chalk did.

T. Come, I see it is time for us to understand what it is to draw lines, or strokes, and to see what constitutes the difference between one line and another. You see on that table hanging up some lines?

P. Yes, we do.

T. What do you call those lines on the left?



P. Some of them are shorter and some longer than the others.

T. Could you draw a ship or a man's face with such lines?

P. O no; those lines are strait, there are no strait lines in a man's face.

T. Then you have found out that these are strait lines; these I suppose are the only kinds of lines.

P. O no; there are lines that go round like a ring or a hoop; and there are others that are crooked.

T. So then we have strait lines, circular lines, and curved lines?

P. Yes, there are these several kinds.

T. Those lines on the left have another property as they now appear.

P. They lie one above the other.

T. There is another property still.

P. They are at certain distances, and are successively longer than each other.

T. There is yet another property.

P. Then some one who knows better must find it out.

T. Look through that window, as far as your eye can reach, and mark the point at which the earth and sky appear to meet.

P. I do.

T. That point is called the horizon, and a line drawn from the eye to that point would be called a horizontal line.

P. Aye, now I see those lines are level with the horizon, and are called horizontal lines.

T. Exactly so: but what will you say to the lines which resemble them in every thing but position; those on the right.

P. They certainly are not parallel with the horizon, but how to name their position I do not know.

T. A mast of a ship is erect, it is also vertical, it is also perpendicular.

P. Then these lines on the right are vertical, or erect, or perpendicular lines.

T. Come, let us see, if we understand each other. On my slate, at one inch from the upper and side frame of my slate, I draw a horizontal line of one inch.

P. [They repeat his words and draw the line as he does.]

T. What have you done?

P. I have drawn a horizontal line of one inch long.

T. How do you know it is one inch long?

P. By recollecting the length of an inch on your rule.

T. Here, measure and see which is the most exact.

[Here emulation in exactness is produced; the rule is applied; and a pair of compasses introduced, which being set to an inch, at once points out the true or false inch. This matter adjusted they proceed again.]

T. Beneath my first horizontal line, as half an inch distant therefrom, I draw my second horizontal line of the length of two inches and a half.

P. [Repeat and execute, and compare as before; and thus lines are drawn of varied lengths, until the slate is filled; and the exercises are then changed to vertical lines—thus]

T. On the right side of my slate commencing at one inch from the upper frame and from the side frame of my slate I draw a vertical line of two inches.

P. [The pupils repeat and execute, and the result is compared with the rule and compass; and so vertical lines are continued till the slate is filled; these exercises are continued at intervals; and the effect is such in practice, that I have seen the boys between six and twelve, not only draw lines accurately straight and of the length proposed without any aid of a rule to draw by or to measure, but make the lines as direct and even and as exact to the desired length, as if the parallel ruler and the compass had been used in the drawing. Facts like these will be appreciated, if it be considered in how many of human pursuits, dexterity and exactness diminish effort and facilitate execution; in the practical sciences and the useful arts—in building, painting, and the mechanic arts especially;—even by the merchant or tradesmen the knowledge of magnitudes and proportions is necessary for determining the capacity of vessels of every description.

But the application of these principles, and this method of instruction is not limited to horizontal, or vertical, or strait lines; for, the construction of every figure devisable for geometrical purposes, is produced in the same mode of oral communication, and made as intelligible by speech as by linear drawing, which proceed together. In a subsequent paper, I propose giving an exemplification of the minuteness of this power, in the enumeration of the properties of angles. But it must be kept in mind, that in doing so, I step much farther into the body of the method, than the practice authorises in the immediate instruction; for the progression would require examples and dialogues which would occupy some volumes.

PHILOLOGICAL DEPARTMENT.

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GRAMMAR: *Continued from page 270.*

THE preter-imperfect subjunctive, when used indicatively, is translated by "should" or "would." *Illam si amaret, in matrimonium* DUCERET, "If he loved her, he would marry her." The preterperfect is used on similar occasions, and translated in the same manner. MALUERIM *illum quam ullum alium imitari*, "I would rather imitate him than any other man." It is a remarkable circumstance, that these three subjunctive forms, called the present, the preter-imperfect, and the preter-perfect, when used indicatively, are often applied to the future. This cannot be considered as accidental; for when translated into the English language, which adheres to no form of expression as an appropriate version of the Latin word, but varies it as occasion seems to require, they retain the form of the past tense "would," and "should," even when the event spoken of can apply only to the future. It might therefore seem interesting to inquire what peculiarity the meanings of these expressions have, which should render them analogous to the past tense. We clearly see that there is a foundation for such an inquiry, when we advert to the import of some English phrases. "I may go," and "I might go," are radically future in their application. "I should go," is equally future with "I shall go," though not otherwise synonymous. "I can go," and "I could go," are also future, as applied to the verb "go." The analysis of these phrases is comparitively easy, as they consist of auxiliaries. We at once recollect that the future of a verb may be expressed by the present of a verb preceding it signifying preparation for futurity; and, as the present is only one instant, and therefore has been said by some metaphysicians to have no existence, we consider it as including some adjoining portion of time, (most generally a part of the past,) at least as great a range as gives us scope for that short exercise of memory which we confound with consciousness, and which is necessary for reviewing any event and enabling us to describe it. There seems to be no impropriety in describing by a past tense a present action at least that is to be discontinued. If the present may be thus delineated, it follows that the verb preparatory for the future may also be used in the preterite tense. "I might go," is future, as applied to the verb "go," though the preterite of the verb "may." For the purpose of tracing the source in this phraseology, it is of importance to observe that "may" and "might," which are different in their own tense, impress different characters on the future event which they are employed to introduce. Both of them express an uncertain or conditional futurity. But "may" signifies a state of greater prepa-

ration, and expresses a belief in the probability of the condition being obtained, and the consequent contingency taking place. "I may if you will," expresses greater readiness than "I might if you would." The latter phrase is either a hesitating way of intimating that we are partially prepared, on which account it would on some occasions be reckoned less polite; or signifies a hesitation, originating in our modified hopes respecting the condition, and then it is a more diffident manner of making a proposal. But the question recurs, why should the past tense be preferred for this uncertain mode of speaking of futurity? We should be happy to present a satisfactory solution to that problem. Although we had no offer, we should have thought it unfair to decline stating the query. Perhaps this form of expression is used, because these uncertain expectations consists of images which possess the same sort of dimness with an object which retires to a distance in time or place, and consequently with an event which fades from the view by taking its place among ideas of distant recollection. Or, if this explanation is objected to as a refinement too subtile to have given origin to expressions so common, perhaps the choice of the past tense of the auxiliary on such occasions has proceeded from its signifying that the state of things preparatory for the future is discontinued: this want of extension to the present may conventionally be held equivalent to a less confident mode of representing a contingent futurity. But, though this explanation of the English phraseology now under review should be thought in some degree plausible, it might still be asked, how are such principles to be applied to the Latin subjunctive tenses? Do these tenses imply in their etymological structure all the force of the English auxiliaries? Did they possess that force in the intentions of the persons by whom they were first employed? Or are they mere general modes of stating a connection of ideas applicable to conditions and other subjunctions, as well as to conditional assertions? The difference betwixt these two methods of explaining them is perhaps merely verbal. If the subjunctive is an instrument intended to be applied indiscriminately to all connections of ideas, whether actual or hypothetical, the purpose fulfilled by it is the same, whether it consists in the want of some character belonging to the indicative, or in the possession of a superadded character, including the meaning of an additional sign. Even if it were acknowledged to be of subsequent invention, and on the whole more complicated in its form than the indicative; this is to be accounted for, not by its expressing more ideas, but by its later use, as applied to the purposes of human language. The English auxiliaries express something indefinite with regard to the events described; and the same thing is done by the subjunctive form of the Latin verb. But the variety of the English auxiliaries, as applied to translate the same Latin word, leads us to regard the Latin subjunctives as of less special meaning, and therefore partaking more of the character of general marks of annexation, which admit of being applied to a variety of purposes, the particulars of which are left to be referred from the tenor of the discourse. If we knew the etymology of the ancient subjunctive forms, some light would be thrown on their history, but very little on their intrinsic nature. Words derived from the names of particular kinds of objects often become much more general; and, though they receive subsequent limited applications which render them again particular, they do not denote the same kinds of objects by which they were first suggested. The expedients adopted for varying general signs, and fitting them for expressing different particular meanings with precision, are entirely arbitary, and often consist in an advantage taken of accidental original synonyms. This last stage of variation is that which has given the Latin language the form in which it was found in the writings of the classics. The varieties of phrase are not, in general, founded on corresponding differences in the direct etymological origin of the words. The indicative uses of the subjunctive mood therefore may on the whole be considered as elliptical.

The pluperfect subjunctive, when used indicatively, expresses a conditional assertion concerning the past. This is the meaning of it in the example already mentioned, *periisset*, "he would have perished." Sometimes it may be translated by "ought to have." Thus in the fourth book of the Æneid, after Dido's voluntary death, her sister says, *eadem me ad fata* VOCASSES, "You *ought to have* invited me to share your fate." This is a conditional preterite, and may be considered as implying "If this had been the character of past events, all would have been well." The past is subjoined to an implied regret, and resembles such an ellipsis as the following English phrase, "if I had but seen him before he died!"

The future subjunctive is justly considered as differing slightly in tense from the future indicative, by expressing the "future completion of an event." But it is not on that account deprived of the peculiar character of the subjunctive mood; nor can we think, with some, that it differs from the future indicative in tense alone. It is not used, in general, for the simple and unconditional assertion of this species of futurity. It is not probable, for instance, that it would be used for expressing the assertion in the following sentence: "As soon as you have finished your letter, I *shall have* finished mine." That the tense in this sentence may be literally expressed in Latin, the passive voice is preferred, as it supplies an indicative tense of this sort by the combination of the future indicative of the substantive verb with the past participle. *Quum literas tuas scripseris, meæ etiam* FINITÆ ERUNT. This combination is denominated in our grammars a future *subjunctive* of

the passive voice. The cause of this denomination is, that it is similar in tense. It unquestionably belongs to the indicative mood, while the others coupled with it in our grammars are subjunctive. The future of the subjunctive is indeed like its other tenses used indicatively; but like these others it is limitted to uncertain and hypothetical assertions.

The subjunctive mood of the verb is on the whole a generic form applied chiefly to two less general uses, viz. subjunction, and the assertion of uncertain or conditional connections betwixt different objects. The property which these two uses of the verb have in common is uncertainty. There is one use of this mood which we have not hitherto mentioned, as it did not require to be separately illustrated, to wit, interrogation; as in this phrase, *An sit quies scelerato?* This will be considered as an instance of subjunction by those who allow, what we shall afterwards more fully state, that an interrogative sentence implies the imperative of the verb "to tell." *Quis est* signifies *Dic mihi quis est*. From this it follows, as well as from the obvious nature of a question, that uncertainty is also involved in that application of the subjunctive. Its imperative application has been already stated to be an instance of subjunction by ellipsis.

In Dr. Gregory's memoir *On the Theory of the Moods of Verbs*, contained in the 2d vol. of the Edinburgh Philosophical Transactions, there are some apposite observations on the application of the subjunctive mood to a great variety of phrases mutually analogous, which had occasioned some difficulty. That author considers the moods of the verb as formed for giving a direct representation of the feelings, intentions, or present actions of the speaker, and resolves them into a variety of affirmations in the first person singular. *Oro* or *jubeo* is according to this theory, implied in the imperative; *dico*, in the indicative; *opto*, in the expression of wishes and a variety of others on different occasions, as suited to the various applications of the subjunctive. From the great diversity of feelings and purposes which may actuate a speaker, he infers that the real moods are too numerous to be expressed by separate modifications of the verb without rendering language cumbersome and complicated; but that those which are most common are expressed in this manner, for the sake of given a condensed force to the utterance of human thought.

The view which we have given of the moods of verbs and of language in general, differs from the principles now mentioned. We have considered language as not originally directed to the object of expressing spontaneously and naturally our own thoughts. It executes our purposes, by arranging the signs of thought in that order which in our opinion is best fitted to influence another person; an object which may be sometimes most successfully accomplished by concealing our own sentiments. To express our mode of thinking is indeed a very frequent object of language, and naturally has certain contrivances adapted to it; but to tell that we are speaking or asserting, seems to constitute no part of its object in addition to the use of the signs fitted for performing that office. The author, therefore, acknowledges that his principles have not so full an application to the indicative as to the other moods.

With whatever degree of vehemence or delicacy men wish to express their feelings, they are provided with means adapted to their object. Significant gestures and tones independent of language may be employed. When it is thought proper to exhibit the same animation in the form of written language, syllabic imitations of involuntary exclamations are committed to writing and are afterwards employed by rule. We sometimes execute the same purpose by placing our communicable ideas in such a point of view as tends to produce in others the feelings which occupy our own minds, sometimes by describing in more deliberate and explicit language the manner in which we are affected. Language is on other occasions fitted for expressing the feelings of the speaker by elliptical turns of phrase, in which more is at first meant than is verbally stated. These phrases are afterwards appropriated to the expression of specific feelings. Moods of the verb which were originally of a more general meaning may, by transpositions of words, or by an abruptness in a manner of their introduction, be subjected to such diversities as to become characteristic of the most vehement, the most rapid, or the most subtile modifications of sentiment. For example, instead of telling that we wish for the occurrence of a particular event, we may express the ardour of our wishes by the exclamation "oh." "Oh that he would return!" Or, without such an exclamation, we may say, "That he would return!" or, "That he would but return!" The Romans may be supposed to have at one time been in the habit of using the word *uti* in this manner, *Uti rediret!* But as this might have been ambiguous from being too general, and might be supposed by the hearer to signify some purpose entertained in the performance of another act, as, *uti rediret, veniam ei policiti sunt*, another particle *nam* is introduced, to indicate that this kind of event is abruptly mentioned as an object of the wishes of the speaker. It may not be easy to show why a particle equivalent to the English word "for" was preferred to any other; but, when habitually used in this connection, it becomes appropriate. It is thus that *utinam* becomes equivalent to "oh that," or, "I wish that."

The Greeks have an optative mood adapted to the expression of wishes, though it appears not to be applied exclusively to that object.

The brevity and force thus created by means of the moods of verbs are effects of the contrivances of language which abound in all the different parts

of speech. When a combination of ideas or an assemblage of thoughts or feelings becomes habitual, it receives an appropriate condensed expression. We complain of tediousness when an idea, which might have been expressed by a single word or a short phrase, is slowly brought out by means of a long series of words or of sentences. But when we have an unusual assemblage of ideas to express, no circumlocution is to be spared which may be necessary to give our language perspicuity, and the beauty of felicitous contrivance is often conspicuous in the invention of means for exhibiting thoughts, which servile imitators would either not have conceived, or not have attempted to express. Language is happily used, where those phrases and words which are rendered intelligible and appropriate by established usage are employed judiciously for expressing complicated ideas. They may be placed in a connection with each other fitted to create combinations which are still more complicated, and possess a character of novelty which is rendered necessary by the purpose of our discourse. In fine, the skill of a writer may occasionally be discovered by the use of simple signs, in such a fortunate succession as to express, apparently by accident, some novel but well defined state of feeling and of thought. The expedients suited to these purposes are therefore not confined to the use of particular moods of the verb, and the act is not characteristic of their nature.

5. *The Infinitive Mood.*

We had occasion, in describing other parts of speech, to mention the *Infinitive* of the verb. We observed, that it is not an original word, not the earliest form of the verb, but consists of the imperative in composition with a sign derived from some different source. In explaining the use of the subjunctive mood we observed, that in the Latin language that mood with the introductory particle *ut* may have its place supplied by the infinitive. *Volebat ire* is equivalent to *volebat ut iret*. We shall now inquire more particularly into its nature and uses.

Both its etymology and application show that it expresses merely the specific idea conveyed by the particular verb to which it belongs, in such a way that it can be used as a noun, by becoming the subject or predicate of a sentence, or part of either. It does not, like the indicative, appear to contain the copula, except when substituted for that mood by ellipsis, as it frequently is by Sallust and other authors in depicting scenes of bustling activity or striking interest. Hence it has by some been denied the properties of the verb, and considered as in all respects nothing more than an abstract noun. It is formed in Latin by adding to the radical letters of the verb, as existing in the imperative, the termination *re*. From *ama* we have *ama-re;* and from *doce, doce-re.*

This termination, being identical with the radical letters of *res* "a thing," seems to be exactly the same original sign, and in this application it retains the same meaning. *Ama* signifies "love;" *ama-re*, "love-thing," i. e. "love" considered as "a thing," or object of thought. In English the infinitive consists of the radical letters of the verb preceded by the word "to;" as "*to love*" and "*to* teach." Mr. Tooke considers the infinitive as possessing the character proper to the verb, though he does not tell us in what this consists. He describes the word "to" as having the power to confer the verbal character on a noun. At the same time he considers it as originally the same with the verb "do," and as meaning "act," "effect," or "consummation." These suggestions are extremely obscure. It is not easy to conceive what influence the additional idea of "effect" or "consummation" could have, to impress the character of a verb on a word which is otherwise a noun. We must therefore leave the opinions of that author in the same ambigious state in which we find them. On some occasions in the English language this prefixed word is dispensed with. As "we saw him *go* away," and "we bid him *write* to us when he arrived at the end of his journey." In whatever light the infinitive mood of the verb may be considered, we find that this form of it, as existing in the English language, has the same meaning and uses with the words formed by such terminations as the Latin *re*, and receiving the same appellation in other languages.

The following is the question which claims our present attention. Is the infinitive mood of the verb properly and in all respects a noun? Is *amare* "to love," for example, a word of the same signification and uses with *amor amoris* "love?"

We shall obtain the most advantageous view of the nature of this part of speech, by taking in detail a survey of the circumstances in which it resembles the noun, and those in which it deviates from it.

The American Farmer, a new and interesting work, edited by John S. Skinner, Esq. is now publishing in Baltimore in an octavo form, in a handsome style, at $4 per annum. It is devoted to agricultural science, internal improvements, news, prices current, &c. &c. From a careful perusal of the contents of the first number, we are of opinion that it deserves an extensive patronage. To farmers, it will prove a valuable treasure. The liberality of the citizens of Baltimore evinced towards works published in New-York, we hope will be reciprocated with the same spirit by our citizens.

We have received several communications, relative to the state of literature in the United States. They will receive due attention.

Arithmetic in our next.